steam units planned.

It should be a source of some concern that natural gas has become the fuel of choice, following the failure of gas back-out regulations in the 70s and early 80s, calling for elimination of gas as a powerplant fuel. But reporting utilities evidenced no reservations, except to suggest that units would have oil-burning capacity as well. Since most utility fuel oil will come from offshore, and since oil is the second choice among planners of new units, current utility plans raise questions of energy security, as well as balance-of-trade issues.

NEXT CAPACITY NEEDED	
1990	11
1991	5
1992	3
1993	9
1994	6
1995-97	12
1998-2000	13
2000+	12

NEXT CAPACITY TO BE ADDED	
1990	4 utilities
1991	2 utilities
1992	1 utilities
1993	4 utilities
1994	3 utilities
1995-97	4 utilities
1998-2000	3 utilities
2000+	2 utilities
Total	23 utilities

TYPE CAPACITY TO BE ADDED	
Baseload Steam	7 units
Combustion Turbine	38 units
Hydro	5 units
Combined Cycle	15 units
Other	14 units
Total	79 units

Brownouts reported

Respondents reported broad experiences with brownouts last summer. Seventy-five utilities encountered the problem at least once during the sunmer, but only eight said they encountered full-scale blackouts.

Plant modifications reported

While powerplant modifications of one sort or another were shown to be common among all types of utilities with generation facilities, there still is considerably more study than actual programs. Only 30 utilities reported formal life extension programs, per se. Another 17 said they were involved in plant modifications and 16 reported uprating programs. Twenty-two utilities reported "other" programs. A number also reported they had intensified their plant maintenance programs.

FUEL FOR NEXT UNIT	
Gas	48 units
Oil	14 units
Coal	7 units
Other	10 units
Total	79 units

IMPROVING PRESENT UNITS	
Life Extension	30 utilities
Uprating	16 utilities
Modernization	17 utilities
Other	22 utilities
Total	85 utilities

ECAR

	Gen	T&D	Other
1990	$ 1,640	$ 1,445	$ 420
1991	1,930	1,613	428
1992	1,530	1,595	449
1993	1,556	1,585	446
1994	1,450	1,456	317
Total	8,106	7,694	2,060

Utilities that make up the **East Central Area Reliability Council** plan capital investments totalling $17.9 billion over the five years 1990-1994. This represents an increase of $4.1 billion, or almost 24 percent, as compared with their five-year plans reported last year.

While generation projects reflect an increase of more than $1 billion, T&D expansion represents the major increase. T&D spending will total $7.7 billion, $2.4 billion or more than in last year's survey. Other, non-categorized project spending will total $2 billion, up 39 percent.

ERCOT

	Gen	T&D	Other
1990	$ 751	$ 796	$ 348
1991	896	805	232
1992	189	438	124
1993	426	491	108
1994	825	602	126
Total	3,086	3,132	937

Utilities in the **Electric Reliability Council of Texas** will invest substantially greater capital for generation in the 1990-1994 period than earmarked for the 1989-1993 period. Generation investment will total $3.1 billion, $1.3 billion over last year's five-year projection. T&D spending will decline about $800 million from last year's projections, but total capital spending, at $7.2 billion, will be up about 6 percent.

This year's projections should be considered to be a return to normal after poor ERCOT participation raised projectability questions last year.

MAAC

	Gen	T&D	Other
1990	$ 1,204	$ 1,374	$ 607
1991	1,153	1,480	573
1992	1,163	1,571	574
1993	1,324	1,663	455
1994	1,601	1,753	518
Total	6,445	7,842	2,728

Mid-Atlantic Area Council utilities will invest $17 billion for new facilities in the 1990-1994 period, up about $3 billion from last year's projections. Both generation and "Other" capital spending will grow slightly, but the major increase will be in T&D activities, a category which is projected to climb $2.5 billion, to more than $7.8 billion.

MAAC utilities are planning some new capacity additions, largely in under-100-MW sizes, although some baseload capacity is slated for the mid-90s and beyond.

Most MAAC utilities report some ongoing life extension or power plant modification programs.

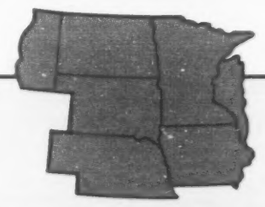
Utilities in the **Mid-America Interpool Network,** comprising utilities in Illinois, Eastern Wisconsin and Northeastern Missouri, will concentrate their capital construction programs in T&D projects, $4.8 billion in the 1990-1994 period. Projected T&D investment will be about 13 percent greater than in last year's forecast. Generation spending, while still lagging T&D spending substantially, will be up about 8 percent, to $2.8 billion. With a relatively comfortable reserve, MAIN utilities will concentrate their capacity additions on peaking units of less than 100 MW.

MAIN

	Gen	T&D	Other
1990	$ 762	$ 1,063	$ 237
1991	635	1,182	225
1992	576	1,161	235
1993	481	1,072	210
1994	386	396	149
Total	2,840	4,874	1,056

Mid-Continent Area Power Pool utilities, with the lowest demand and capacity of the nine NERC regions, will spend some $2.6 billion through 1994. But spending will decrease annually through the five years. Major thrust for system expansion will be in the area of transmission and distribution, where annual expenditures will remain fairly consistent in the $270-$300 million range. Generation expenditures will peak this year and fall off for the remaining four years of the period. Other spending will taper off throughout the five-year period.

MAPP



	Gen	T&D	Other
1990	$ 238	$ 299	$ 94
1991	221	279	73
1992	190	276	53
1993	132	270	44
1994	143	280	36
Total	925	1,404	300

U.S utilities in the **Northeast Power Coordinating Council**, although having suffered brownouts last summer and facing increasingly tightened capacity margins over the next five years, will devote the majority of their capital investment to transmission and distribution, peaking in 1992 at $1.94 billion. Increasing dependence on power from the pool's Canadian utilities will call for additional international transmission capacity. Generation spending will be devoted largely to combustion turbines and combined-cycle units.

NPCC

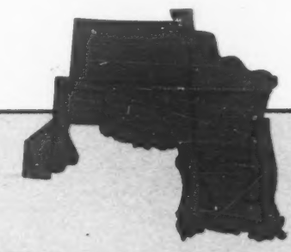
	Gen	T&D	Other
1990	$ 747	$ 1,682	$ 278
1991	825	1,899	306
1992	792	1,943	292
1993	803	1,914	304
1994	276	942	86
Total	3,443	8,380	1,266

SERC

	Gen	T&D	Other
1990	$ 3,223	$ 2,536	$ 640
1991	3,661	2,850	672
1992	3,431	2,318	427
1993	4,821	2,310	505
1994	3,966	1,626	285
Total	19,101	11,640	2,529

Utilities making up the **Southeastern Electric Reliability Council** will spend more for system expansion in the next five years than utilities in any other NERC region. In fact, SERC utilities will spend more than one in every four dollars of capital spent for new and improved facilities in the U.S. SERC utilities will spend $19.1 billion for generation, almost 40 percent of all generation spending in the country. Generation spending will peak in 1993. NERC utilities also will spend $11.6 billion for T&D, peaking in 1991. Total spending by SERC utilities will peak in 1993.

SPP



	Gen	T&D	Other
1990	$ 266	$ 819	$ 115
1991	386	952	126
1992	390	905	111
1993	332	1,032	96
1994	368	769	88
Total	1,742	4,477	536

Southwest Power Pool utilities also are committed to increasing transmission and distribution systems while curtailing generation system additions. Overall, SPP utilities will invest $1.7 billion for generation facilities, both new and upgraded, while spending almost $4.5 billion for T&D system expansion. The years 1991 and 1993 will be the biggest years for construction spending at about $1.6 billion each, with 1993 being the biggest year for T&D system expansion. "Other" capital expenditures will decline from 1991.

WSCC

	Gen	T&D	Other
1990	$ 992	$ 2,611	$ 763
1991	906	2,762	812
1992	889	2,952	1,022
1993	971	2,795	1,012
1994	497	1,355	755
Total	4,255	12,476	4,363

Utilities making up the **Western States Coordinating Council** constitute the nation's second largest market for electrical system expansion. WSCC utilities will invest almost $21.1 billion for new system in the five-year period. Three of every four dollars spent for system improvements will be spent for T&D expansion. The biggest capital spending year for T&D will be 1992, while 1990 will be the big year for generation expansion. WSCC utilities will spend more for "Other" capital investment than for generation projects.